

**A CIRCUIT, APPARATUS AND METHOD  
FOR IMPROVED CURRENT DISTRIBUTION OF OUTPUT  
DRIVERS ENABLING IMPROVED CALIBRATION EFFICIENCY  
AND ACCURACY**

Inventor

Yingxuan Li

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**FIELD OF THE INVENTION**

The present invention relates to a circuit, and in particular a circuit for calibrating an output driver current.

**BACKGROUND OF THE RELATED ART**

In high performance output driver circuits, the output current should be maintained or calibrated to a desirable value. There are a number of ways of calibrating an output current.

First, a desired output current may be obtained through closed-loop continuous calibration. If a binary weighted current control digital-to-analog converter ("DAC") is used, closed-loop continuous time calibration can introduce unacceptable noise into the output current.

Second, a desired output current may be obtained through open-loop discrete time calibration.

Third, a thermometer-coded DAC can be used, but this may introduce large capacitance at a pin. In high-speed link design, minimizing pin capacitance enables improved performance.

Once an appropriate output current is calibrated, distributing information regarding the output current to other output drivers or pins is desirable.

Generally, information regarding the calibrated output current can be transferred to other output drivers by a current distribution network using either a current passing or a voltage passing technique.

Fig. 2 illustrates a current distribution network 200 using a current passing technique. An N-bit DAC generates a current to transistors 213-210 in response